

We claim:

1. A method of making an algorithm for the prediction of the RNAi potency of a RNAi reagent comprising:
  - a) determining experimentally the RNAi potency of a plurality of RNAi reagents comprising a sequence complementary to at least one target gene; and
  - b) training an artificial neuronal net using said data set.
2. A method according to claim 1, wherein the RNAi potency is determined by measuring the amount of protein encoded by the target gene.
3. A method according to any of the previous claims, wherein the RNAi potency is determined by a reporter gene assay.
4. A method according to any of the previous claims, wherein the RNAi reagent is targeting the 3'-UTR of the fusion-mRNA encoding for the reporter protein.
5. A method according to any of the previous claims, wherein the data from different fusion-mRNA can be normalized.
6. A method according to any of the previous claims, wherein the potency of at least 100 RNAi reagents, preferably at least 1000 RNAi reagents is determined.
7. A method according to any of the previous claims, wherein the sequences of said RNAi reagents are randomly chosen.
8. A method according to any of the previous claims wherein the sequences of said RNAi reagents have a region between 15 and 30 nucleotides long with sufficient complementary to bind to target mRNA.
9. A method according to any of the previous claims wherein the complementary region of the RNAi reagent contains one or several mismatches to the corresponding region of the target gene.
10. A method according to any of the previous claims wherein the RNAi reagent is a siRNA.

- 17 -

11. A method according to any of the previous claims wherein the RNAi reagent is a shRNA.
12. A method according to any of the previous claims wherein the RNAi reagent is a miRNA.
13. An algorithm obtained by a method according to any of the previous claims.
14. A computer readable storage medium comprising an algorithm according to Claim 13.
15. A computer system comprising an algorithm according to Claim 13 and computer hardware.
16. A method for predicting the RNAi potency of a RNAi reagent comprising:
  - a) providing a plurality of RNAi reagent sequences comprising a region complementary to a given target gene;
  - b) running the trained algorithm according to Claim 13 to said RNAi reagent sequences using a neuronal network; and
  - c) selecting the RNAi reagent sequence(s) which are predicted to be potent.
17. A method for inhibiting the expression of a given target gene, comprising:
  - a) providing a plurality of RNAi reagent sequences comprising a region complementary to a given target gene;
  - b) running the trained algorithm according to Claim 13 to said RNAi reagent sequences using a neuronal network;
  - c) selecting the RNAi reagent sequence(s) which are predicted to be potent;
  - d) synthesizing the RNAi reagent(s) selected in c); and
  - e) exposing cells expressing the target gene with the RNAi reagent(s) of d).
18. A method according to Claim 16 or 17, wherein the RNAi reagents that are selected in c) are above a given threshold value.